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VOICE COMMANDS COORDINATION BETWEEN THE SAME APP ON MULTIPLE DEVICES

ABSTRACT

A system and method are disclosed for voice command coordination between instances of the same application running on multiple devices. The devices could be any that process voice commands, such as smartphones, tablets, smartwatches, laptops or IoT devices. The system coordinates the devices by broadcasting short communicates using human-inaudible sonic frequencies. In the first step of the method, the user gives a voice command, which is received in a number of devices that interpret the command. Each device determines a relevancy score of the command and then broadcasts the score as short communicates using inaudible sonic frequencies that are received by the other devices. Thereafter, each device receives short communicates with relevancy scores of other devices, and summarizes the relevancy score ranking of each device. Finally, the device with the highest relevancy score is determined to have highest priority and executes the voice command, while the other devices may cancel the command.

BACKGROUND

Devices with voice commands enabled by default, listening to ambient sound are becoming more ubiquitous. Having more than one such device active at a time may lead to a command being processed by all of them, which can cause confusion, unnecessary traffic or actions being duplicated. There is currently no mechanism to figure out on which device the user wants to perform a given action. Existing voice interfaces do not effectively support the coordination of voice commands on multiple devices. Thus there is need for a better method to coordinate execution of voice commands on multiple devices.

DESCRIPTION

This disclosure presents a system and method for coordinating voice commands between instances of the same application running on multiple devices. The system as depicted in FIG. 1 comprises a voice application running on multiple devices with voice recognition, receiving voice commands from a user. The system coordinates the devices by broadcasting short communicates using inaudible sonic frequencies. Such broadcast can contain information about the receiving device's perspective as to the command which includes the relevancy of the command to the device, usage of the device at the time of the utterance, approximate distance of user giving the command etc. which are combined to a single priority. The devices could be any of those configured to process voice commands, such as smartphones, tablets, smartwatches, laptops or IoT devices.

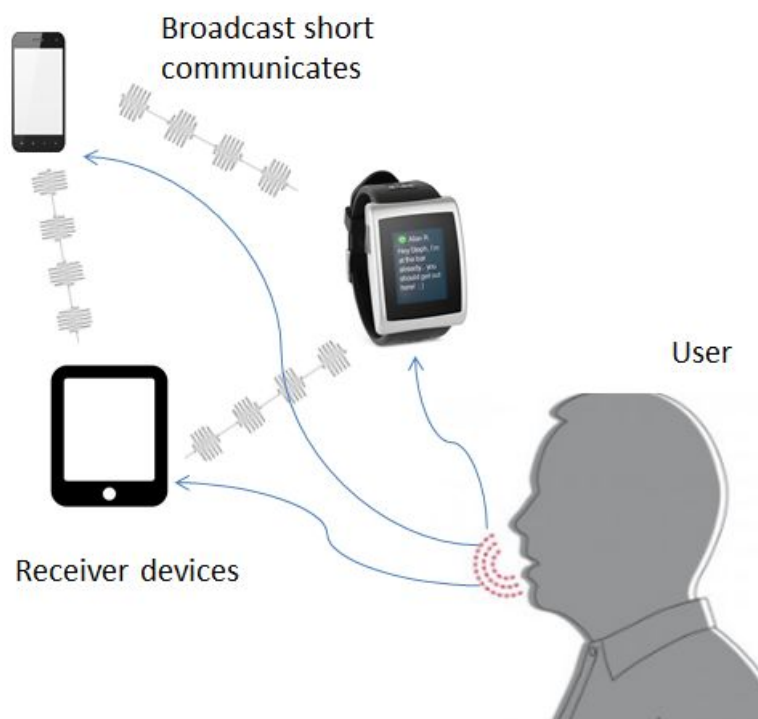


FIG. 1: System for coordinating voice commands on multiple devices

The method for coordinating voice commands illustrated in FIG. 2 is implemented in steps A through F. In step A, the user gives a voice command, which is received in a number of devices that interpret the command (step B). Each device determines a relevancy score of

the command (C) and then broadcasts short communicates using human-inaudible frequencies that are received by the other devices, in step D. In the next steps E and F, each device receives short communicates with relevancy score of other devices, and summarizes the relevancy score ranking of each device. In the final step G, the device with the highest relevancy score is determined to have highest priority and executes the voice command. The other devices cancel the command.

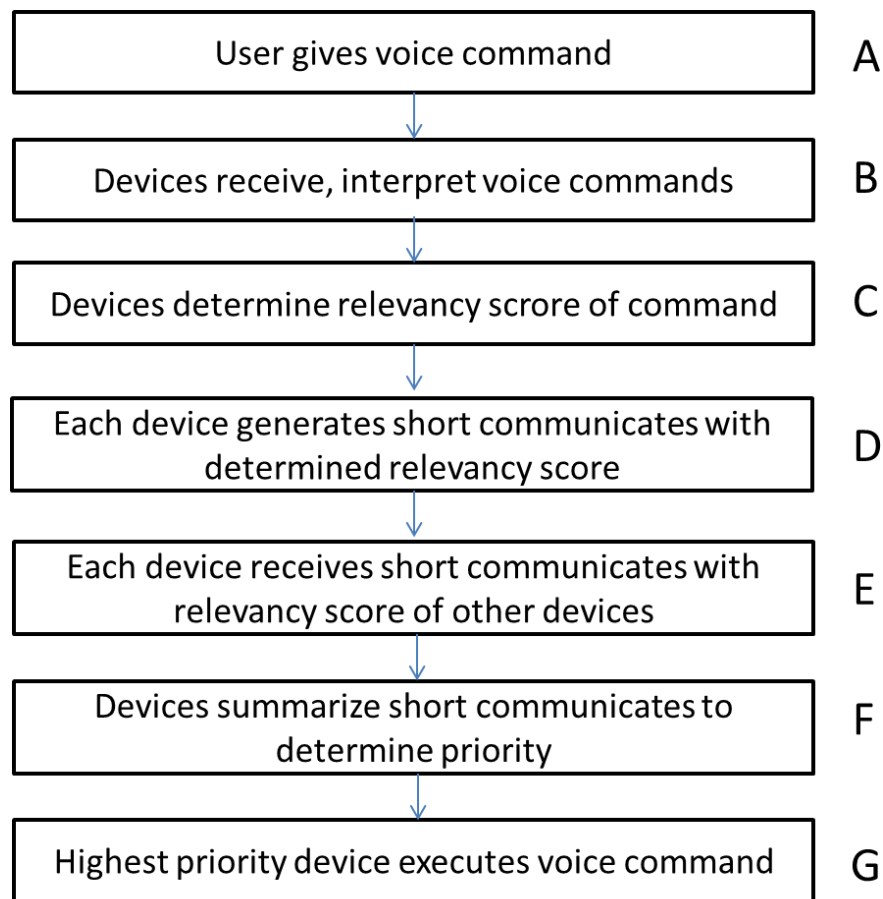


FIG. 2: Method for coordinating voice commands on multiple devices

The sonic frequencies used could be infra/ultrasound frequencies that are inaudible for humans and safe for animals. However, in alternative configurations, the method could also be implemented via other short range communication protocols such as Bluetooth, Zigbee or other protocol. Advantages of the system include not requiring server-side

coordination between devices, and dispensing with additional hardware to implement the method. The use of inaudible sound obviates the need for short distance communication protocols to be turned on or off.